

## **ABSTRACT**

Systems and methods are provided for controlling gain compensation over temperature and frequency variations. A variable amplifier may be used to receive a control signal and an input signal. The variable amplifier may be operable to apply a gain to the input signal to  
5 generate an output signal, wherein the gain is a function of the control signal. A summation module may be used to combine a gain reference signal and a gain variation signal to generate the control signal. The gain reference signal may be calibrated at a reference temperature and a reference frequency. A gain calibration module may be used to output the gain variation signal as a function of both a current operating temperature and a current operating frequency.